

176115

16

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V

DATE: JUL 23 1990

SUBJECT: Water Division Review of the Remedial Investigation Report for the  
Hi-Mill Manufacturing Company Site, Highland, Michigan

FROM: *[Signature]*  
Dale S. Bryson  
Director, Water Division

TO: David A. Ullrich  
Acting Director, Waste Management Division

The Water Division has reviewed the Hi-Mill Manufacturing site, as requested by the Office of Superfund. Our comments follow the background summary.

Background

The Hi-Mill pipe tubing and fitting manufacturing plant is located on a 4.5 acre site in Highland, Michigan. Until 1983, the plant discharged wastes associated with manufacturing and degreasing into two unlined lagoons. One lagoon was excavated and filled in 1983, while the smaller lagoon has not been located. The site is bounded on one side by a four lane highway and on the remaining three sides by the Highland State Recreational Area. The recreational area includes an 8-10 acre marsh due east of the site and Waterbury Lake, 1,000 feet southeast of the site.

The site is underlain by 200-300 feet of complex glacial drift deposits consisting of outwash sands and gravels interbedded with clays. There are possibly three aquifer zones.

Contaminants include trichloroethene, 1,2-dichloroethene, vinyl chloride, and possibly some inorganic constituents. The previous draft workplan for this site notes that there are private residences 2,000 feet east of the site. Area residents use private drinking water wells.

Ground Water Protection Branch

We have several concerns about the information in the draft remedial investigation (RI) report.

We question the accuracy of the hydrogeologic maps presented in the report, particularly because they are inconsistent with the text. On page 48, it is stated that shallow monitoring wells SW-1, SW-4, SW-6, SW-7, SW-8, SW-11, SW-14, and SW-15 "are screened entirely" within the clay barrier zone, zone II. Zone II separates the shallow and intermediate aquifers, zones I and III, respectively. Monitoring well SW-17 is thought to be screened entirely in zone III, the intermediate aquifer zone. Yet, in Figure 3-3, it is apparent that data from the above wells were used to model ground water contours of the shallow aquifer, zone I.

On page 49, it is noted that "some of the abrupt contour characteristics are thought to be a result of the contouring program or the inclusion of dissimilar shallow wells in the data set." We also note that SW-17 was not used to contour water levels in the intermediate aquifer zone. Based on the above inconsistencies, we consider these maps inadequate. The maps should be redrawn using only data that is pertinent to the given aquifer zone. Furthermore, if the above-mentioned monitoring wells that are screened in a supposed barrier layer (zone II) are used to contour the shallow aquifer, and are in fact yielding water level measurements commensurate with other data from the shallow aquifer, we must question whether zone II is actually functioning as a barrier at all. We urge further study to assess the degree to which this layer functions as a barrier. At this point, we are not convinced that this layer does not allow transport between zones I and III.

The vagueness of the hydrogeologic cross section in Figure 3-1 also leads us to question whether zone II is an effective confining layer. It is stated on page 45 that zone II may be laterally discontinuous; however, no such concept is expressed on the cross section. This figure should have a depth or thickness axis. We recommend that more exact cross sections be drawn, and that more well log data be incorporated than what is shown in Figure 3-1. As it stands, the layers shown may not be as continuous as implied. This would have serious bearing on contaminant transport between zones I and III. The fact that similar contaminants have been found in both zones should make this argument even more persuasive.

The RI repeatedly discounts data without a satisfactory reason. Several inorganic species were detected in ground water at elevated levels, but because no background samples were taken, the RI states that there is no basis for identifying them as contaminants. Background samples must be taken before these constituents can be ruled out as contaminants. The RI also seems to ignore organic concentration data if the blank samples for that sampling date also turned up the same analytes. This would be a viable position, except that we note that on several occasions, the sample concentration is twice as high as the concentration found in the blank and in one instance, an order of magnitude higher (c.f., Table 4-7, reference date 3/19/90: SW-01 shows .160 mg/l acetone while the blank shows .012 mg/l acetone). We think this warrants a closer look, and some of the discounted organics, particularly acetone, may in fact be present as contaminants at the site.

The RI should show nearby residences on all maps, particularly on ground water flow maps. The RI also does not discuss private well usage in the immediate area. It is vital to know where wells are in the immediate area and to what depth they are drilled.

Finally, we would like to point out two less important difficulties in reviewing the RI. The hydrogeologic map of the deep aquifer zone does not have elevations associated with the contour lines, and Table 4-7 should have a legend describing the abbreviations used in the "flags" column (A. Miller, 6-7060).

Drinking Water Section

The Drinking Water Section was unable to review the subject document.  
(A. Sanders, 6-4239)

The Water Division appreciates the opportunity to review the subject document. If you have any specific questions regarding these comments, please contact the indicated program staff reviewer.

cc: Charles Wilk